REMARKS

The application has been carefully considered in light of the Office Action dated October 31, 2005. Claims 1, 4 to 6, 11 and 12 are pending in the application, of which Claims 1, 6, 11 and 12 are independent. Reconsideration and further examination are respectfully requested.

Claims 1, 4 to 6, 11 and 12 were rejected under 35 U.S.C. § 112, first and second paragraphs, as allegedly failing to comply with the written description requirement and for allegedly being indefinite. Claims 1, 3 to 6, 11 and 12 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,883,821 (Komaki) in view of U.S. Patent No. 5,644,509 (Schwartz). Reconsideration and withdrawal of these rejections are respectfully requested.

In regard to the rejection under 35 U.S.C. § 112, first paragraph, Applicant submits that the setting feature of Claim 1 is supported by step S1 in Fig. 9, the generating feature is supported by steps S2 to S4 in Fig. 9, the obtaining feature is supported by step S6 in Fig. 9, the determining feature is supported by step S7 in Fig. 9, and the calculating feature is supported by step S8 in fig. 9. Furthermore, a weight value is supported by u of equation (6), further supported by u' and v' of equation (8), and further supported by u', v' and w' of equation (10). Finally, Applicant submits that the generation feature calculates weight values corresponding to a plurality of input data, and generates a weight table from the calculated weight values, in advance. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

In regard to the rejection under 35 U.S.C. § 112, first paragraph, Applicant has amended claims to clarify that the plurality of weight values stored in the weight table exist, and are calculated by calculation of each weight value. Further, Applicant has amended the claims to

clarify that the invention is applicable to a process using a LUT beyond three dimensions such as RGB color conversion, CMYK color conversion and the like. Accordingly, Applicant has amended "a grid" to read "grids" in accordance with the Examiner's suggestion. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Turning now to specific claim language, amended independent Claim 1 is directed to a data conversion method of performing image processing on image data expressed in plural components by using a multi-dimensional look-up table, and outputting processed image data. The method includes the steps of: setting grid positions of the multi-dimensional look-up table which has grids arranged at non-uniform intervals; generating a weight table to store weight values based on the set grid positions, wherein each of the weight values is calculated by an integer computation using distance between positions of input data and grids adjacent to the input data, and is multiplied by a constant which is a power of 2 greater than the intervals of the grids; obtaining the weight values corresponding to the plural components of input image data by referring to the weight table; determining a relationship of greater or smaller among the weight values; obtaining output data of grids of the multi-dimensional look-up table which corresponds to the input image data; and calculating the processed image data, which corresponds to the input image data, by interpolation using the obtained output data, the obtained weight values, the constant, and an expression corresponding to the determination result in the determining step, wherein the interpolation is executed by an integer computation and uses the constant as a divisor.

As previously submitted by Applicant, in contrast to the features of Claim 1, the weighting coefficients as disclosed in Komaki correspond to dx, dy and dz values as shown in Figs. 11 to 37. These dx, dy and dz values are distances between an interpolating objective point

and grids as shown in Fig. 2. However, the weighting coefficients of Komaki are not generated using an integer computation using distance between positions of input data and grids from a weight table that are adjacent to the input data, and are not multiplied by a constant which is a power of 2 greater than the intervals of the grids.

Furthermore, the grids disclosed by Komaki are arranged at uniform intervals with the intervals assigned a value represented by 2^n where n represents the number of lower bits of the input signal (Komaki, column 13, line 4). Thus, "2^n" as used in Komaki is a value representing a grid interval and does not define a constant multiplied by a weight value as in the present invention. Furthermore, Komaki shows equations for interpolation in Figs. 11-37. These interpolation equations do not include multiplication as a multiplicand of 2^n. In other words, the grid interval represented by "2^n" of Komaki is not a weight value that is multiplied by a constant that is a power 2 greater than intervals of the grids with the obtained weight value used in an integer computation to interpolate processed image data corresponding to the input image data. Thus, the value of "2^n" used to represent the uniform grid intervals of Komaki is different from the constant that is a power 2 greater than intervals of the grids of the present invention.

Finally, Komaki fails to disclose or suggest determining a relationship of greater or smaller among weight values, obtaining output data of grids of the multi-dimensional look-up table which corresponds to input image data and calculating the processed image data by interpolation using the obtained output data, the obtained weight values, a constant that is a power 2 greater than intervals of the grids, and an expression corresponding to the determination result.

In addition, Schwartz discloses a method of creating a color transformation table having non-uniform grid point spacing. The table is created by combining a grid table having

uniform grid point spacing with input and output tables having non-linear characteristics. That is, Schwartz discloses a creation method for a transformation table, but Schwartz is silent regarding using such a transformation table in the interpolation process of the present invention. In Fig. 2, Schwartz does disclose use of an interpolation process. However, Schwartz is entirely silent on how such an interpolation process works. More specifically, Schwartz fails to disclose any feature of an interpolation related to the interpolation method of the present invention.

In light of the deficiencies of Komaki and Schwartz as discussed above, Applicant submits that amended independent Claim 1 is now in condition for allowance and respectfully requests same.

Amended independent Claims 6, 11, and 12 are directed to an apparatus, a computer program product storing a computer readable medium having a computer program code and a computer readable medium storing recorded data, respectively, substantially in accordance with the method of Claim 1. Accordingly, Applicant submits that Claims 6, 11, and 12 are also now in condition for allowance and respectfully requests same.

The other claims in this application are each dependent from one of the independent claims discussed above and are therefore believed allowable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the allowability of each on its own merits is respectfully requested.

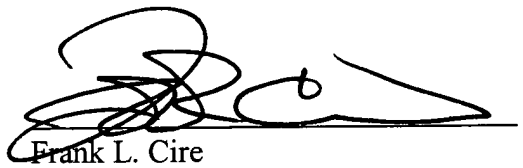
Furthermore, Komaki does not teach that determination of determining relationship for greater or smaller among the weight values, or usage of an expression used in the interpolation is decided by the determination result.

Schwartz does not teach the above structure of the present invention, too. Therefore, the present invention allowable over Komaki and Schwartz.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney may be reached in our Costa Mesa, CA office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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